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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

VIA FACSIMILE AND U.S. MAIL

August 16, 2000

Mr. David Healy
Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

Re: Comments on the Proposed Remedial Action Plan
Keystone Sanitation Landfill Superfund Site, Union Township, PA

This letter is in response to the comments on the Proposed Remedial Action Plan ("PRAP") for the Alternate Remedy for Operable Unit 1 at the Keystone Sanitation Landfill Superfund Site which were submitted by the Maryland Department of the Environment in its June 21, 2000 correspondence. EPA has reviewed these comments and has enclosed a response. The enclosed response will be included in the responsiveness summary to the Record of Decision Amendment for the Keystone Sanitation Landfill Superfund Site. Please feel free to call me at (215) 814-3124, if you have any questions regarding this matter.

Sincerely,

Kelley A. Chase
Remedial Project Manager

cc: Anthony Dappolone
Thomas A. Cinti

Response to Comments by the Maryland Department of the Environment on the Proposed Remedial Action Plan for the Alternate Source Control Remedy, Keystone Sanitation Landfill Superfund Site, Union Township, PA

MDE Comment 1. "Based on the premise that the primary contaminants of concern at the site are methane and volatile organic compounds (VOCs), the proposed enhanced landfill gas extraction (ELGE) system seems to be a more aggressive approach to landfill management than the classic method of capping, leachate collection and monitoring. There does appear to be an increased potential for the release of liquid contamination to groundwater during the installation of the numerous deep ELGE wells that will be installed under this plan."

Response: The 1990 Record of Decision (ROD) required installation of a landfill cap and methane collection system. Pursuant to the 1990 ROD, the approved landfill cap/methane control design provides for a series of gas extraction wells to control migration of methane. The landfill cap/methane control design calls for 16 wells, approximately15 to 22.5 feet deep to capture methane gas generated by the landfill. The maximum depth of the waste in the upper portion of the landfill is estimated to be 30 feet.

The first phase of the conceptual ELGE design, which is described in the May 2000 Focused Feasibility Study, is based upon the currently approved design for methane management with 3 additional ELGE wells, approximately 15 to 25 feet deep, in the vicinity of the Pilot Study location. Based on the data collected during the first phase, subsequent phases may involve the installation of additional wells and/or increased rates of gas extraction.

During the design of the remedy, an evaluation will be performed to determine the number and location of the ELGE wells, associated monitoring wells and leachate monitoring points. Although the ELGE wells are expected to be somewhat deeper than the methane wells, all of the gas extraction wells and associated monitoring wells/probes will be installed in the zone of the waste and will not penetrate into the bedrock and the groundwater aquifer beneath the landfill.

Regardless whether the 1990 ROD landfill cap/methane management design or the ELGE design is implemented, care will be taken during the design and installation of the wells to ensure they do not create a pathway for the release of contamination to the groundwater during construction.

MDE Comment 2. "Page 11, VOC Removal - If there is a potential for the release of liquid contaminants during the installation of the ELGE wells, then the timing of the baseline sampling of VOCs should be more clearly stated in the document. As proposed, it is unclear whether the baseline will be conducted "prior to the startup" of the remedial action or "prior to the startup" of the ELGE system. The Record of Decision (ROD) requires the reduction of 90% in the concentration of selected target VOCs. Consequently, it is to the advantage of the Responsible Parties to maximize the baseline measurement of the target

VOCs. A high baseline measurement of target VOCs will result in a greater mass of contamination left behind in the landfill."

Response: Baseline VOC sampling data will be collected at each individual extraction well and associated monitoring points prior to startup of that particular ELGE well. Prior to initiation of construction activities, a remedial design work plan will be developed and will be subject to EPA approval. The work plan and final design documents will fully define the sampling and monitoring requirements for the ELGE remedy. During the design of the remedy, EPA will determine the appropriate sampling protocol, including the timing of sample collection, for the baseline sampling required to meet the ROD Amendment performance standards.

The ROD Amendment requires that monitoring be conducted to determine whether the various performance standards have been met. The performance standards may be used for cessation of enhanced VOC removal in individual extraction wells, clusters of wells, or ultimately the entire ELGE system. Performance monitoring will be conducted at each individual extraction well and associated monitoring points. The performance standard for the landfill gas states that the ELGE system must achieve a 90% reduction in the concentration of selected target VOC compounds at the monitoring points. The 90% reduction of target VOCs will be compared against the baseline VOC sampling data for each individual extraction well and associated monitoring points.

MDE Comment 3. "Page 11, Leachate Monitoring - Again, it would be helpful if the meaning of "year 1" could be clarified. Is "year 1" the first year of system operation or the first year following the ROD?"

Response: "Year 1" refers to the first year of system operation. As discussed above, monitoring will be conducted at the ELGE extraction wells, nearby ELGE monitoring points, and leachate monitoring points to provide information as to the effectiveness of the ELGE system. The monitoring locations will be determined by EPA during the remedial design. The schedule for monitoring will also be defined by EPA in the design.

MDE Comment 4. "Page 13, Post-Construction Monitoring, item 3 - Flare VOC emissions will be based on calculations using analyzed influent rates and the destruction efficiency of the flare. It would probably be more accurate to directly measure the VOC emissions from the flare.

Response: Both the 1990 ROD landfill cap/methane control design, and the ELGE design, must comply with all applicable or relevant and appropriate requirements (ARARs). The ARARs which apply to the emissions from the flare are identified in the Air Resources, Pennsylvania Code, Title 25, Sections 121.7, 121.9, 123.1, 123.2, 123.21, 123.31, 123.41-123.43, and 127.1. These requirements are applicable to fugitive dust control, use of Best Available Technology (BAT), and emissions of specific air pollutants. These regulations are applicable to the air

pollution control measures to be employed during work associated with the upgrading of the soil cover as part of the Alternate Source Control Remedy or the Contingent Remedies, as well as emissions from the ELGE system or the Contingent Remedy treatment system.

The ARARs require that the system be designed to meet BAT to treat emissions from the flare and do not require direct monitoring of the emissions. During the design of the remedy, EPA will review the pilot test data and additional Site data to determine if the system is properly designed and meets the requirements of BAT. Furthermore, EPA will determine if BAT provides adequate protection to human health and the environment at the Site.

In addition to complying with the regulations identified above, the ROD Amendment requires that an operations and monitoring plan be developed which will include the details for maintaining and monitoring the ELGE system to ensure that all systems are operating properly. Monitoring requirements will include: sampling of the combined extracted gas for analysis of individual VOC constituents and methane; flare VOC emissions based on calculations using the analyzed influent stream and the destruction efficiency of the flare; and regular inspections and maintenance to ensure that the flare is operating at its designed destruction capacity. During the design of the system EPA will determine whether direct sampling of the emissions will be required as part of the operations and monitoring plan. In addition, EPA will determine the appropriate air monitoring requirements necessary to protect human health on and near the landfill property.

MDE Comment 5. "Page 20, Short Term Effectiveness - As discussed earlier, the installation of numerous ELGE wells through the waste has the potential to release liquids that are either contained or otherwise trapped within the fill to groundwater. The discussion of short-term effectiveness does not seem to address this potential threat."

Response: The short-term effectiveness criteria evaluates the alternatives against the period of time needed to achieve protection of human health and the environment and any adverse impacts that may be posed during the construction and implementation period, until clean-up goals are achieved.

As discussed in Response #1, there is not a significant difference between the conceptual design of the ELGE system and the 1990 ROD remedy design for the methane control with respect to the number and depth of the gas extraction wells. Therefore, EPA does not believe that the short term effectiveness of the ELGE remedy is significantly different from the 1990 ROD remedy design for the methane control system.

In addition, as discussed above, whether the 1990 ROD landfill cap/methane design or the ELGE design is implemented, care will be taken during the installation of the wells to minimize short term impacts and ensure that the construction of the wells does not create a pathway for the release of contaminants to the groundwater.